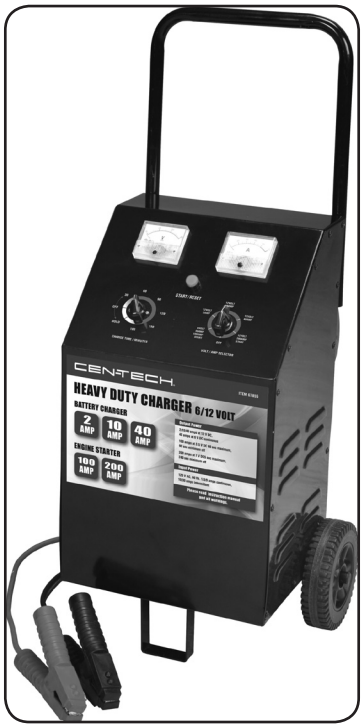
CEN-TECH®

# 6/12V BATTERY CHARGER/ STARTER

**Model 67855**

## SET UP AND OPERATING INSTRUCTIONS




**Visit our website at: http://www.harborfreight.com**

**Read this material before using this product. Failure to do so can result in serious injury. SAVE THIS MANUAL.**

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**For technical questions or replacement parts, please call 1-800-444-3353.**

# SPECIFICATIONS

| | |
|---|---|
| Input | 120 V~, 60 Hz |
| Output Power | 2/10/ 40 A @ 12VDC*<br>40 A @ 6VDC (Continuous)<br>100 A @ 3.5VDC (Intermittent)<br>200 A @ 7VDC (Intermittent) |

| | |
|---|---|
| Time | 3 Hours |
| Power Cord | 6’ - 6” (79”) L |

***Amperage is <u>only</u> present when the unit is connected to a battery or in START mode.**

**NOTE: Some newer vehicles with onboard computers may be damaged during use.** Read the vehicle owner’s manual before starting vehicles with weak batteries.

## IMPORTANT SAFEGUARDS

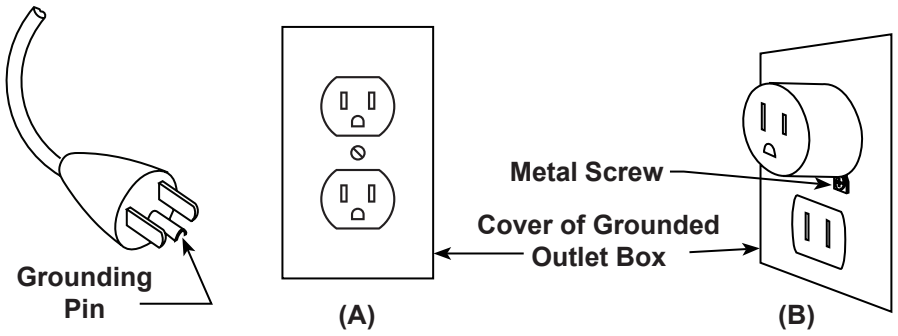
# IMPORTANT SAFETY INSTRUCTIONS

1. “**SAVE THESE INSTRUCTIONS**” - This manual contains important safety and operating instructions.
2. Do not expose charger to rain or snow.
3. Use of an attachment not recommended in this manual may result in a risk of fire, electric shock, or injury to persons.
4. To reduce risk of damage to electric plug and cord, pull by plug rather than cord when disconnecting charger. **An extension cord should not be used.**
5. Use of improper extension cord could result in a risk of fire and electric shock. If extension cord must be used, make sure:
   a. That pins on plug of extension cord are the same number, size, and shape as those of plug on charger.
   b. That extension cord is properly wired and in good electrical condition.
   c. That wire size is large enough for AC ampere rating of charger.

**MINIMUM AWG WIRE SIZE FOR EXTENSION CORDS FOR THIS BATTERY CHARGER**

| AC input Current I, A | Length of cord, m AWG size of cord | | | |
|---|---|---|---|---|
| | 25 | 50 | 100 | 150 |
| 0 ≤ I < 2 | 18 | 18 | 18 | 16 |
| 2 ≤ I < 3 | 18 | 18 | 16 | 14 |
| 3 ≤ I < 4 | 18 | 18 | 16 | 14 |
| 4 ≤ I < 5 | 18 | 18 | 14 | 12 |
| 5 ≤ I < 6 | 18 | 16 | 14 | 12 |
| 6 ≤ I < 8 | 18 | 16 | 12 | 10 |
| 8 ≤ I < 10 | 18 | 14 | 12 | 10 |
| 10 ≤ I < 12 | 16 | 14 | 10 | 8 |
| 12 ≤ I < 14 | 16 | 12 | 10 | 8 |
| 14 ≤ I < 16 | 16 | 12 | 10 | 8 |

6. **GROUNDING AND AC POWER CORD CONNECTION INSTRUCTIONS -** Charger should be grounded to reduce risk of electric shock. Charger is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.
**DANGER - Never alter AC cord or plug provided -** if it will not fit outlet, have proper outlet installed by a qualified electrician. Improper connection can result in a risk of an electric shock.
This battery charger is for use on a nominal 120-volt circuit, and has a grounding plug that looks like the plug illustrated in (A), below. A temporary adapter, which looks like the adapter illustrated in (B), may be used to connect this plug to a two-pole receptacle as shown in (B) if a properly grounded outlet is not available. The temporary adapter should be used only until a properly grounded outlet can be installed by a qualified electrician.




**DANGER - Before using adapter as illustrated, be certain that center screw of outlet plate is grounded.** The green-colored rigid ear or lug extending from adapter must be connected to a properly grounded outlet- make certain it is grounded. If necessary, replace original outlet cover plate screw with a longer screw that will secure adapter ear or lug to outlet cover plate and make ground connection to grounded outlet.

7. Do not operate this charger with a damaged cord or plug – replace the cord or plug immediately.

8. Do not operate charger if it has received a sharp blow, been dropped, or otherwise damaged in any way; take it to a qualified serviceman.

9. Do not disassemble charger; take it to a qualified serviceman when service or repair is required. Incorrect reassembly may result in a risk of electric shock or fire.

10. To reduce risk of electric shock, unplug charger from outlet before attempting any maintenance or cleaning.

11. **WARNING - RISK OF EXPLOSIVE GASES.**

a. Working in the vicinity of a lead-acid battery is dangerous. Batteries generate explosive gases during normal battery operation. For this reason, it is of utmost

importance that each time before using your charger, you read this and follow the instructions exactly.

b. To reduce the risk of the battery explosion, follow these instructions and those published by battery manufacturer and manufacturer of any equipment you intend to use in vicinity of battery. Review cautionary markings on these products and on engine.

12. **PERSONAL PRECAUTIONS**

a. Someone should be within range of your voice, or close enough to come to your aid, when you work near a lead-acid battery.

b. Have plenty of fresh water and soap nearby in case battery acid contacts skin, clothing, or eyes.

c. Wear complete eye protection and clothing protection. Avoid touching eyes while working near battery.

d. If battery acid contacts skin or clothing, wash immediately with soap and water. If acid enters eye, immediately flood with running cold water for at least 10 minutes and get medical attention immediately.

e. NEVER smoke or allow a spark or flame in vicinity of battery or engine.

f. Be extra cautious to reduce risk of dropping a metal tool onto battery. It might spark or short-circuit battery or other electrical part that may cause an explosion.

g. Remove personal metal items such as rings, bracelets, necklaces, and watches when working near a lead-acid battery. A lead-acid battery can produce a short-circuit current high enough to weld a ring or a similar metal object, causing a severe burn.

h. Use this charger for charging LEAD-ACID batteries only. It is not intended to supply power to a low voltage electrical system other than in an automotive application. Do not use battery charger for charging dry-cell batteries that are commonly used with home appliances. These batteries may burst and cause injury to persons and damage to property.

i. NEVER charge a frozen battery.

13. **PREPARING TO CHARGE BATTERY**

a. If it becomes necessary to remove the battery from the vehicle to charge, always remove grounded terminal from battery first. Make sure all accessories in the vehicle are off, so as not to cause an arc.

b. Be sure area around battery is well ventilated while battery is being charged. Gases can be forcefully blown away, by using a piece of cardboard or other non-metallic material such as a fan.

c. Clean battery terminals. Be careful to keep corrosion from coming in contact with eyes.

d. Add distilled water in each cell until battery acid reaches level specified by battery manufacturer. This helps purge excessive gas from cells. Do not overfill. For a battery without cell caps, carefully follow manufacturer's recharging instructions.

e. Study all battery manufacturer's specific precautions such as removing or not removing cell caps while charging and recommended rates of charge.

f. Determine voltage of battery by referring to car owner's manual

and make sure that output voltage selector switch is set at correct voltage. If charger has adjustable charge rate, charge battery initially at lowest rate.

14. **CHARGER LOCATION**

    a. Locate charger as far away from battery as the DC cable permits.

    b. Never place charger directly above battery being charged; gases from battery will corrode and damage charger.

    c. Never allow battery acid to drip on charger when filling battery.

    d. Do not operate charger in a closed-in area or restrict ventilation in any way.

    e. Do not set a battery on top of charger.

15. **DC CONNECTION PRECAUTIONS**

    a. Connect and disconnect DC output clips only after removing AC cord from electric outlet. Never allow clips to touch each other.

    b. Attach clips to battery and chassis as indicated in the following steps (16 and 17):

16. Follow these steps when battery is installed in vehicle. A spark near battery may cause battery explosion. To reduce risk of a spark near battery:

    a. Position AC and DC cords to reduce the risk of damage by hood, door, or moving engine parts.

    b. Stay clear of fan blades, belts, pulleys, and other parts that can cause injury to persons.

    c. Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N, -) post.

    d. Determine which battery post is grounded (connected) to the chassis. If negative post is grounded to chassis (as in most vehicles), see (e). If the positive post is grounded to the chassis, see (f).

    e. For negative-grounded vehicle, connect POSITIVE (RED) clip from battery charger to POSITIVE (POS, P, +) ungrounded post of battery. Connect NEGATIVE (BLACK) clip to vehicle chassis or engine block away from battery. Do not connect clip to the carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

    f. For positive-grounded vehicle, only connect NEGATIVE (BLACK) clip from battery charger to NEGATIVE (NEG, N, -) ungrounded post of battery. Connect POSITIVE (RED) clip to vehicle chassis or engine block away from battery. Do not connect clip to the carburetor, fuel lines, or sheet-metal body parts. Connect to a heavy gauge metal part of the frame or engine block.

    g. When disconnecting charger disconnect AC cord, remove clip from vehicle chassis, and then remove clip from battery terminal.

    h. See operating instructions for length of charge information.

17. Follow these steps when battery is outside vehicle. A spark near battery may cause battery explosion. To reduce risk of a spark near battery:
    a. Check polarity of battery posts. POSITIVE (POS, P, +) battery post usually has larger diameter than NEGATIVE (NEG, N, -) post.
    b. Attach at least a 24 inch long, 6 gauge (AWG) insulated battery cable to NEGATIVE (NEG, N, -) battery post.
    c. Connect POSITIVE (RED) charger clip to POSITIVE (POS, P, +) post of battery.
    d. Position yourself and free end of cable as far away from battery as possible; then connect NEGATIVE (BLACK) charger clip to free end of the cable.
    e. Do not face battery when making final connection.
    f. When disconnecting charger, always do so in reverse sequence of connecting procedure and break first connection while as far away from battery as practical.
    g. A marine (boat) battery must be removed and charged on shore. To charge it on board requires equipment specially designed for marine use.

# SAVE THESE INSTRUCTIONS

## Specific Safety Rules for the Battery Charger

1. Maintain labels and nameplates on Battery Charger. These carry important information. If unreadable or missing, contact Harbor Freight for a replacement.

2. Always wear safety impact eye goggles and heavy work gloves when using the Battery Charger. Using personal safety devices reduce the risk for injury.

3. Maintain a safe working environment. Keep the work area well lit. Make sure there is adequate surrounding workspace. Always keep the work area free of obstructions, grease, oil, trash, and other debris. Do not use power equipment areas near flammable chemicals, dusts, and vapors. Do not use this product in a damp or wet location.

4. Avoid unintentional starting. Make sure you are prepared to begin work before turning on the Battery Charger.

5. Always unplug the Battery Charger from its electrical outlet before connecting its cables to a battery, or performing any inspection, maintenance, or cleaning procedures.

6. **This Charger/Starter does NOT have an automatic cut off. It is equipped with a 2-1/2 hour timer. Check battery and time manually; do NOT depend solely on timer. Leaving Charger/Starter unattended can result in property damage.**

7. Keep extension cord off wet ground and away from water.

8. Use this Battery Charger with lead/acid batteries only. When charging a maintenance-free battery, always monitor the progress of the charge by viewing the ammeter. Do not overcharge a maintenance-free battery.

9. Do not attempt to charge non-rechargeable or defective batteries.

10. Keep connections and cable clamps clean and free from corrosion.

11. Never simultaneously charge several batteries.

12. Do not discard used batteries in the trash. Properly recycle according to local environmental codes.

13. **WARNING:** This product contains or, when used, produces a chemical known to the State of California to cause cancer and birth defects or other reproductive harm. (California Health & Safety Code § 25249.5, *et seq.*)

14. **WARNING:** People with pacemakers should consult their physician(s) before using this product. Electromagnetic fields in close proximity to a heart pacemaker could cause interference to or failure of the pacemaker.

15. **Risk of Explosion!**

- If you detect gas, do not adjust any switches. Do not disconnect the charging clamps. Immediately ventilate the room by opening windows and doors. Do not switch on an electrical fan. When the air has cleared of gas, unplug the unit from the electrical outlet.
- Charge the battery in a well-ventilated area.
- To prevent sparking due to electrostatic discharge, never wear clothes made of synthetic materials when charging the battery.
- Avoid creating or working around any flames or sparks; flames or sparks can ignite the gasses caused by charging and cause an explosion.

## UNPACKING

When unpacking, check to make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual as soon as possible.

## Assembly

1. Place the Battery Charger/Starter on its side.
2. Use two Screws (10) to install the Mounting Foot (5) to the front bottom of the Charger/Starter. See Figure 2, below.

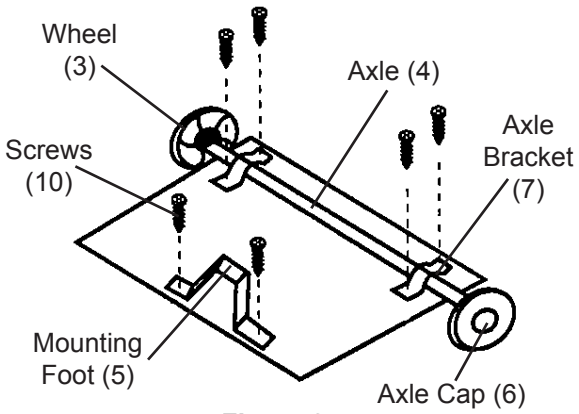



**Figure 2**

3. Slide the Wheels (3) onto the ends of the Axle (4) and slide an Axle Cap (6) onto each wheel. If necessary, tap on the Axle Caps with a rubber mallet. **NOTE:** Verify the Hub of each Wheel is facing in. See Figure 1, above.
4. Set the Axle along the bottom of the Charger/Starter and Align the Axle Brackets (7) with the mounting holes. Once aligned, fasten the Wheel Axle into place. See Figure 1, above.
5. Stand up the Charger/Starter.
6. Remove the two top screws on each side of the Charger/Starter and set the Handle against the back of the unit, aligning the mounting holes. See Figure 2, left.

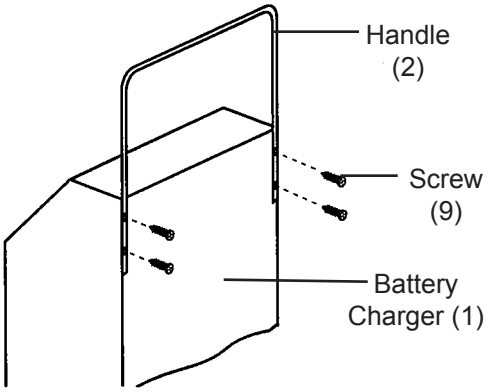



**Figure 3**

7. Use the Screws (9) to mount the Handle (2) to the back of the Charger/Starter (1). See Figure 3, above.

# SETUP

## About Charging Batteries

Batteries draw as much power as they need from charger. The charger does not force current into battery. When a battery is close to being dead or very low charged, it will want to draw more current. When a dead or low battery is charged, the charger's ammeter will register at high end. As the battery charges, the reading will move down toward the low end, resting on zero, when battery is fully charged. See **Figure 1** below.

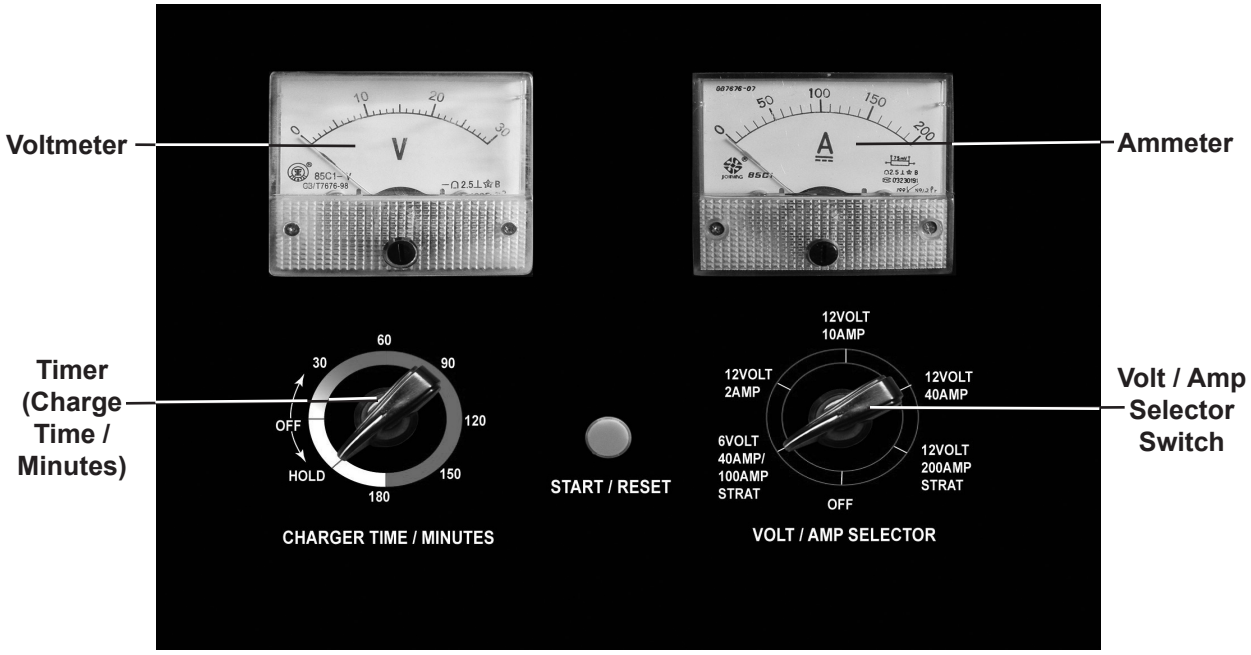



**Figure 1**

**Note:** The ammeter shows the amount of current being drawn from the charger. It does not show what the charger is capable of delivering. When the battery is fully charged and registering zero on the ammeter, a small charge will continue to move from the charger to the battery. If you do not disconnect the charger from the battery, eventually the heat build up from the charge will cause the battery acid to boil and overcharge the battery causing damage to the battery. You must constantly monitor battery charging progress and if battery gets warm, stop charging it immediately.

**Note:** When charging a battery with a built-in hydrometer eye, do not depend on the hydrometer eye to determine the battery charge level.

**WARNING!** Use this charger only on flooded lead-acid batteries. Other batteries may be damaged or may overheat, leak, or catch fire.

## DO NOT PLUG THIS CHARGER IN UNTIL DIRECTED TO DO SO IN THE FOLLOWING PAGES OF THIS MANUAL.

## Output Selector Controls

**Timer:** The Timer prevents over-charging while allowing a battery the needed time to obtain a satisfactory charge. To set the Timer, you must know the size of battery in ampere hours or reserve capacity in minutes, and the state of charge. Often the state of charge is not known, which is why the Timer is limited to 3 hours. With the aid of a battery load tester (not included) the state of charge can be obtained in a few seconds. For example, the average size automotive battery at 50% charge will require 1 to 1-1/2 hours of charging at 40 amp rate to reach full charge state. For the same battery with its Timer set to maximum, 3 hours of overcharging will occur. Slight overcharging should not harm a battery that was otherwise in good condition. When the state of charge is unknown, start out with a timer setting of one hour or less.

**Hold (On Timer Switch):** This cancels out Timer function, allowing for continuous operation. Use for charging more than 3 hours, such as when the 2 amp charge rate is selected. **WARNING!** Monitor charging and stop charge when battery is fully charged.

**Volt/Amp Selector Switch:** Use Volt/Amp Selector to choose charge rate or engine start setting (OFF, 6VOLT 40AMP / 100AMP, 12VOLT 2AMP, 12VOLT 10AMP, 12VOLT 40 AMP, or 12VOLT 200AMP).

**Ammeter:** The ammeter indicates amount of current measured in amperes that is drawn from battery. For example, in 40 amp charge rate a typical discharged battery will initially draw approximately 40 amps. As battery continues to charge, current will taper to 15 to 20 amps at full charge. When cranking an engine, starter motor draws up to 200 amps. The meter needle will register to extreme right side while 2 amp charge rate indicate minimal activity on Ammeter. **NOTE:** The meter doesn't have the resolution to display such low rates.

**Do not depend on reading ammeter to approximate how long charging will take.** Even at full charge, ammeter will still provide as much as 50 percent of charger's output rating. Sometimes conditions such as a cold battery, a sulfated battery, or a deeply discharged Lead Calcium battery (on many newer cars) may cause ammeter to read near a full charge when charging process is only beginning. **NOTE:** Cold batteries (at or below 32° Fahrenheit) begin charging at low rate and then increase as battery warms. When battery charges up, rate will decrease at a normal rate. **Do not charge a frozen battery.**

**SHORTED BATTERIES** will read on ammeter as a high end peg at beginning of charging process. If after 5-10 minutes, needle does not move off high end, the battery probably has a short circuit. Unplug charger and discontinue use. Have battery checked by a qualified technician.

## Preparing the Battery

1. If necessary, remove the battery from the vehicle to charge it. When removing the battery, disconnect the grounded battery cable first. **Reminder:** Turn off vehicle's engine before removing, replacing, or charging a battery.

2. If necessary, add distilled water to the battery cells before charging. Read and follow the battery manufacturer's instruction manual. Never add water to a battery while attached to a charger, or in close proximity to the charger. **Do not overfill**.

3. Clean battery terminals.

4. Check the battery manufacturer's instructions on whether or not to have the cell caps on when charging. If not stated, leave the cell caps on.

## OPERATION

**Caution: Do not overcharge maintenance-free batteries.**

1. If charging a battery while in a vehicle, leave the hood open and do not leave the charger unattended. Separate the charger and battery, keeping them at least five feet apart.

2. Set the Timer to the proper setting for the type of battery being charged. See Table 1, below.

3. Plug the power cord into a grounded electrical outlet or extension cord.

4. Set the Volt / Amp Selector Switch to desired setting.

5. Connect the positive (red) cable clamp to the positive terminal of the battery. If charging a battery mounted in a vehicle, first remove the vehicle's red cable from the battery; otherwise damage may occur to the vehicle's electrical system. If in doubt, refer to the vehicle's service manual.

6. Connect the negative (black) cable clamp to an unpainted solid portion of the vehicle. Push the Start / Reset Button.

7. **NOTE:** If the cables are reversed or touching (short-circuited), the unit will beep and the Battery Charger will shut down. Check that the cables are connected correctly and then push Start / Reset again.

8. The Charger / Starter is now supplying charging current to the battery. View the Ammeter to see the amount of charging current. (The Ammeter will display the amount of the "current draw" of the battery. As it charges, it draws less current. The

**Table 1**

| Battery Size / Rating | | | Charge Rate* Charging Time (Hours)** | | |
|---|---|---|---|---|---|
| | | | 12V 2 Amp | 12V 10 Amp | 12V/6V 40 Amp |
| Small batteries | Motorcycle, Garden Tractor, etc. | 6-12 AH | 3-6 | NR | NR |
| Cars / Trucks | 200-315 CCA | 40-60 RC | 13-20 | 2-1/2 -4 | 1/2-3/4 |
| | 315-550 CCA | 60-85 RC | 20-35 | 4-7 | 3/4-2 |
| | 550-875 | 85-125 RC | 35-55 | 7-11 | 2-3 |

Notes: *Charge Rate for this model are listed on the front panel. **Based on battery at 50% charge.
Key: AH = Ampere Hours
NR = Not Recommended
CCA = Cold Cranking Amps
RC = Reserve Capacity

**WARNING!** This Charger/Starter is not automatic and can overcharge and dry up a battery if allowed to operate for extended periods of time. Monitor charging during use.

Ammeter will move toward zero as the battery charges.)

9. After fully charging the battery (when the Ammeter reads nearly zero), unplug the Charger Start power cord from the outlet or extension cord.

10. Remove the negative (black) cable clamp from the vehicle.

11. Remove the positive (red) cable clamp from the battery.

## Engine Starting

**Note:** This Charger/Starter's high-current output can help start vehicles with weak batteries. **Some newer vehicles with onboard computers may be damaged from this process.** Thoroughly read the vehicle owner's manual before using this procedure.

1. Set the charge rate and timer to the OFF positions.

2. Plug the Charger AC power cord into the AC outlet and then switch from OFF to HOLD position.

3. To start the engine, set the charge time dial to HOLD. DO NOT set it to the OFF position. Set the Volt/Amp selector to the correct setting. Connect the red positive cable to the positive battery terminal and the black negative to an unpainted solid metal portion of the vehicle.

4. Push the green button to start. If the unit beeps, the cables are reversed or touching (short-circuited) and the Engine Starter will power off. Check that cables are connected properly and push the green Start/Reset button to start.

5. Make sure setting of Engine Start charge rate matches the vehicle battery and turn on engine. Follow the duty cycle printed on the front panel of your charger for proper ON/OFF times.

6. **NOTE:** During extremely cold weather or when battery is severely exhausted, charger the battery for about five minutes before attempting to turn on engine.

7. If engine fails to start, charge battery for an additional five minutes before attempting to start.

8. After the engine starts, move the charge rate switch to OFF and unplug the power cord from outlet before disconnecting the DC cable clamps.

# MAINTENANCE AND TROUBLESHOOTING

**WARNING: Unplug the Charger/Starter from its electrical outlet before performing any inspection, maintenance, or cleaning procedures.**

1. Before each use, inspect the general condition of the Battery Charger/Starter. Check for loose screws, cracked or broken parts, damaged electrical wiring, and any other condition that may affect its safe operation. If abnormal noise occurs, have the problem corrected before further use. Do not use damaged equipment.
2. Periodically recheck all nuts, bolts, and screws for tightness.
3. After each use, wipe down the Cable Clamps and apply a light grease.
4. Store in a clean and dry location.

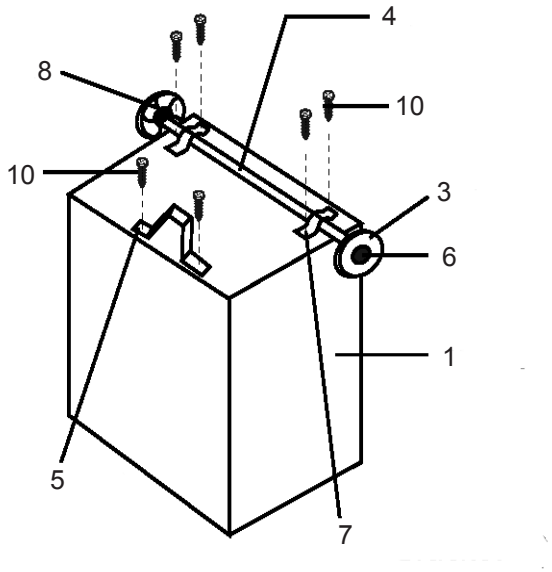
## Troubleshooting

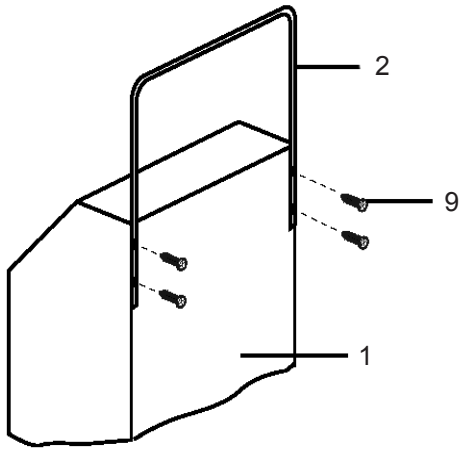
| Problem | Possible Causes | Likely Solutions |
|---|---|---|
| Ammeter display reads maximum. | Defective battery. | Check or replace battery. |
| No ammeter reading. | 1. No power to engine starter.<br>2. Battery cables not making connection.<br>3. Two-amp charge rate being used. | 1. Check power and cable outlet connections.<br>2. Clean battery cables and reset cable clamps.<br>3. None, meter will not indicate here. |
| Charging current not to full output. | 1. Battery is partially charged.<br>2. Defective battery, will not hold full charge. | 1. Continue charging battery.<br>2. Check and/or replace battery. |
| Ammeter needle moves up to full charge, then drops to zero. Makes “clicking” noise. | 1. Battery is completely dead.<br>2. Defective battery.<br>3. Charge Engine Starter is resetting itself after circuit overload.<br>4. Circuit breaker is cycling.<br>5. Reverse connections at battery. | 1. Continue charging battery. Charge Engine Starter will continue to reset itself until the battery reaches a chargeable level.<br>2. Check and/or replace battery.<br>3. Wait until Charger automatically resets itself.<br>4. May be the wrong switch position.<br>5. Shut off charger and correct cable lead connections. |

**Follow all safety precautions whenever diagnosing or servicing the tool. Disconnect power supply before service.**

# PARTS LIST AND ASSEMBLY DIAGRAM

| Part | Description | Q'ty |
|---|---|---|
| 1 | Battery Charger | 1 |
| 2 | Handle | 1 |
| 3 | Wheels | 2 |
| 4 | Axle | 1 |
| 5 | Mounting Foot | 1 |
| 6 | Axle Caps | 2 |
| 7 | Axle Brackets | 2 |
| 8 | Washer | 2 |
| 9 | Screw (5x28mm) | 4 |
| 10 | Screw (5x13mm) | 6 |
| 11 | Hex Wrench (not shown) | 1 |




**Note:** There are no replacement parts available for this Charger/Starter.

**PLEASE READ THE FOLLOWING CAREFULLY**

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER NOR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

**Note:** Some parts are listed and shown for illustration purposes only and are not available individually as replacement parts.